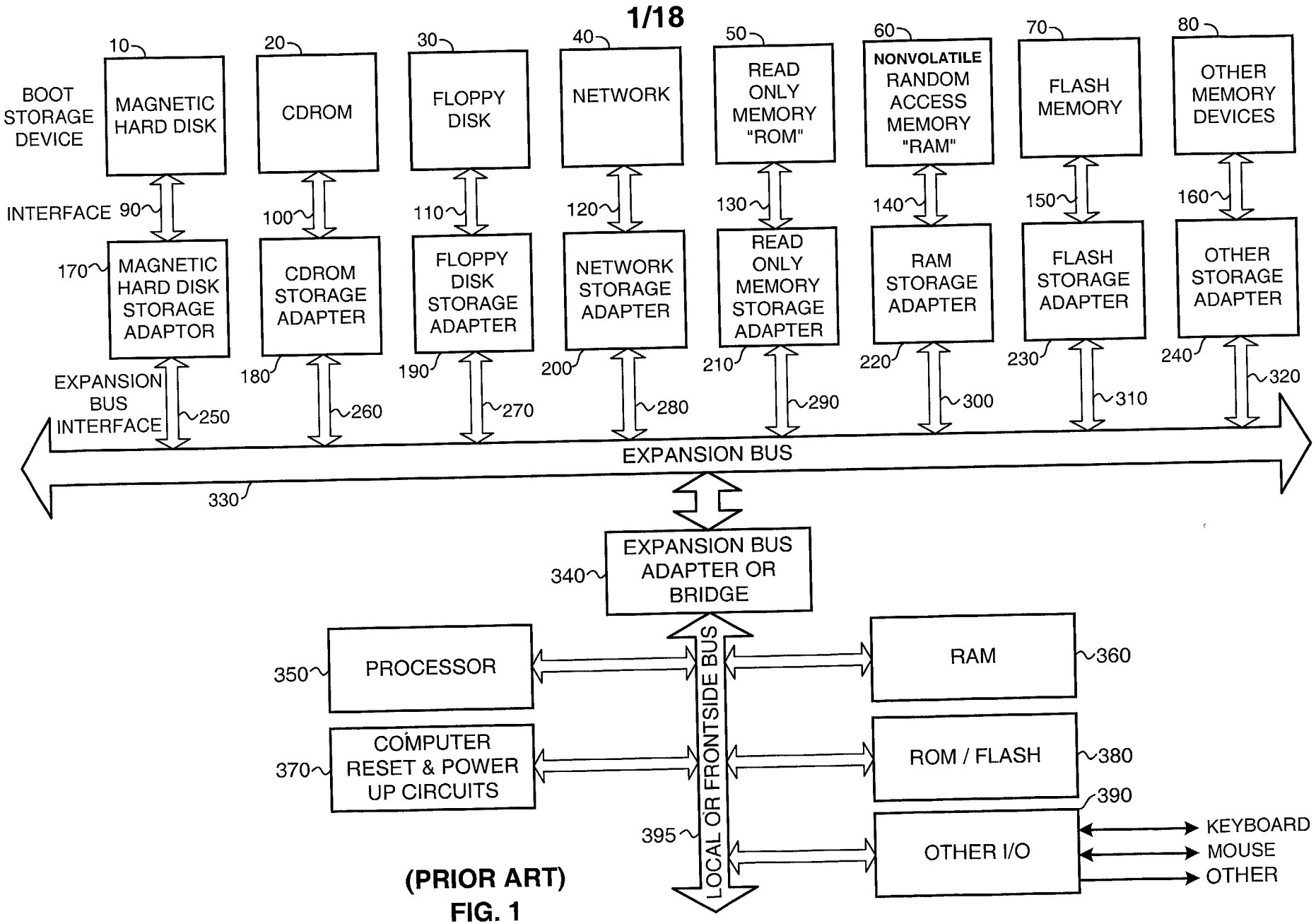
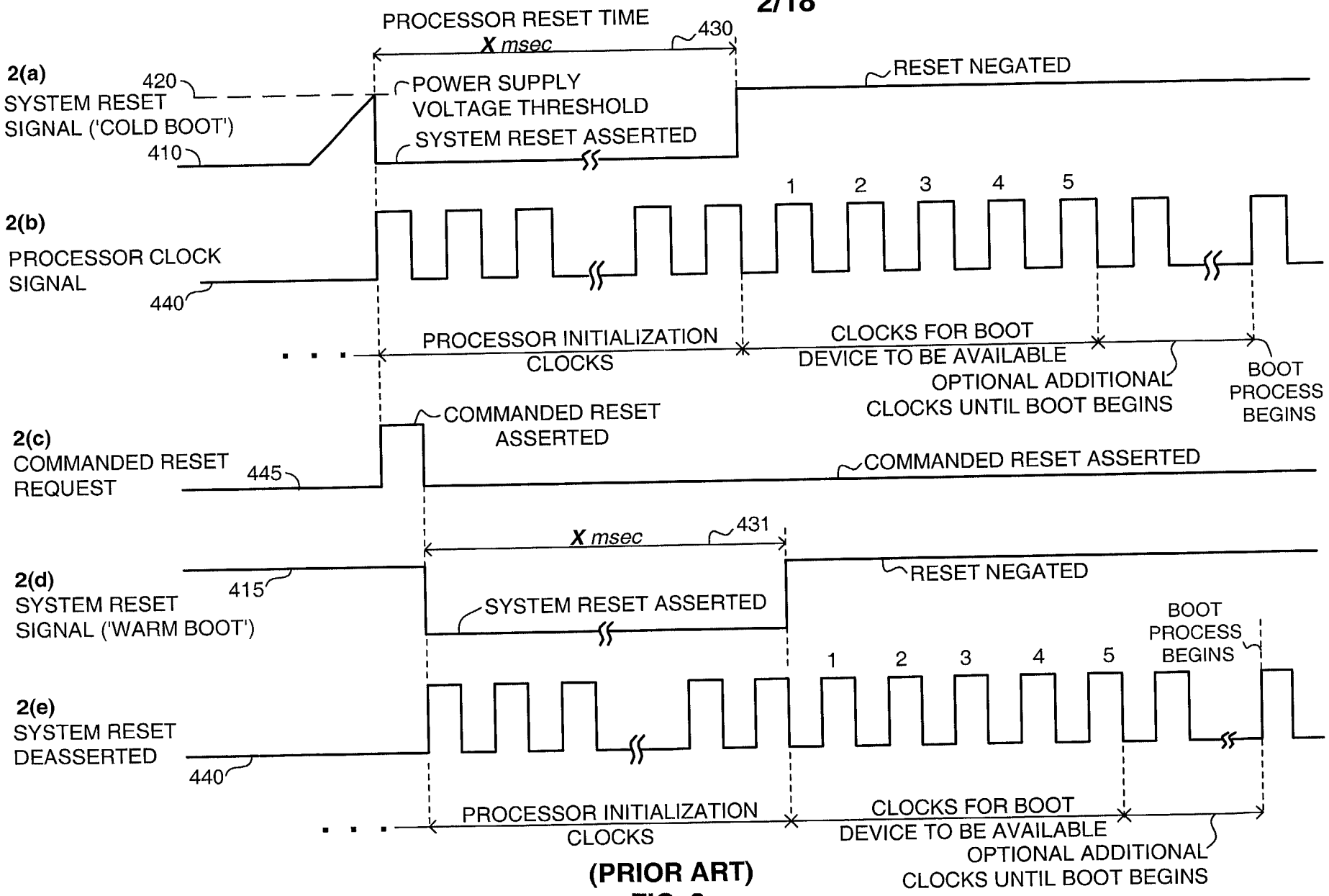
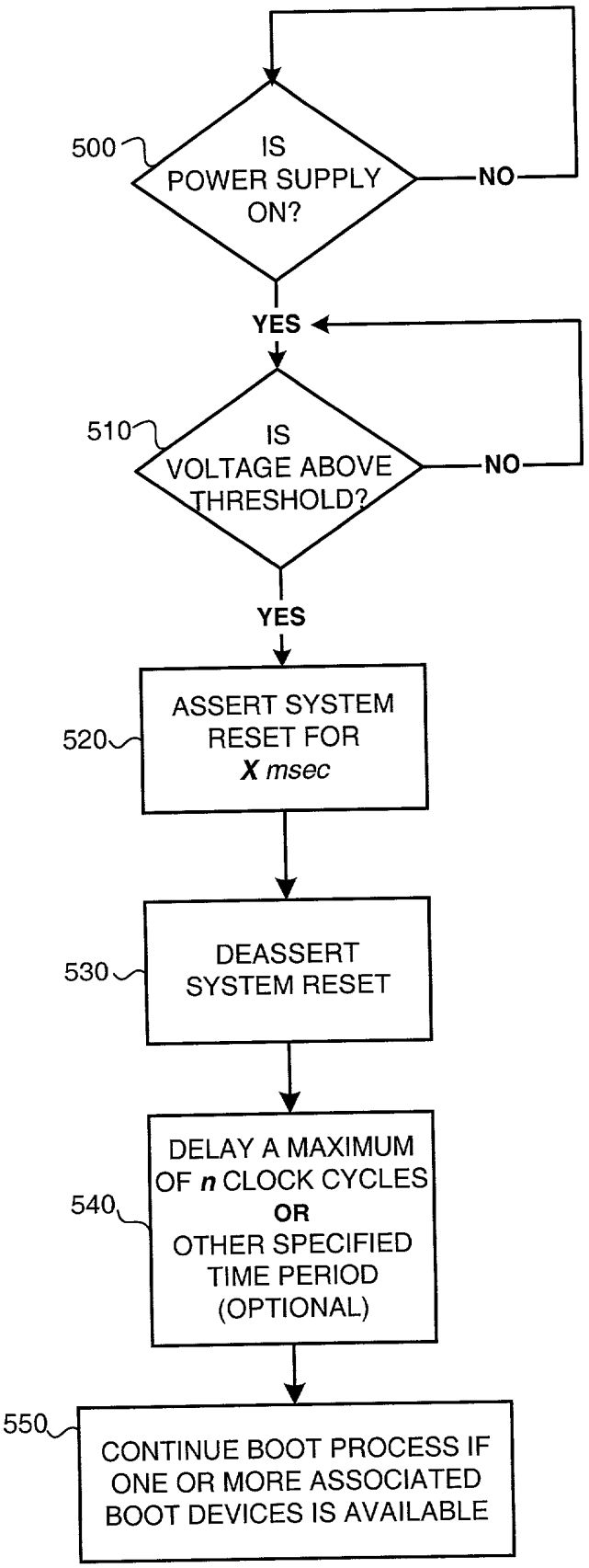


(PRIOR ART)
FIG. 1

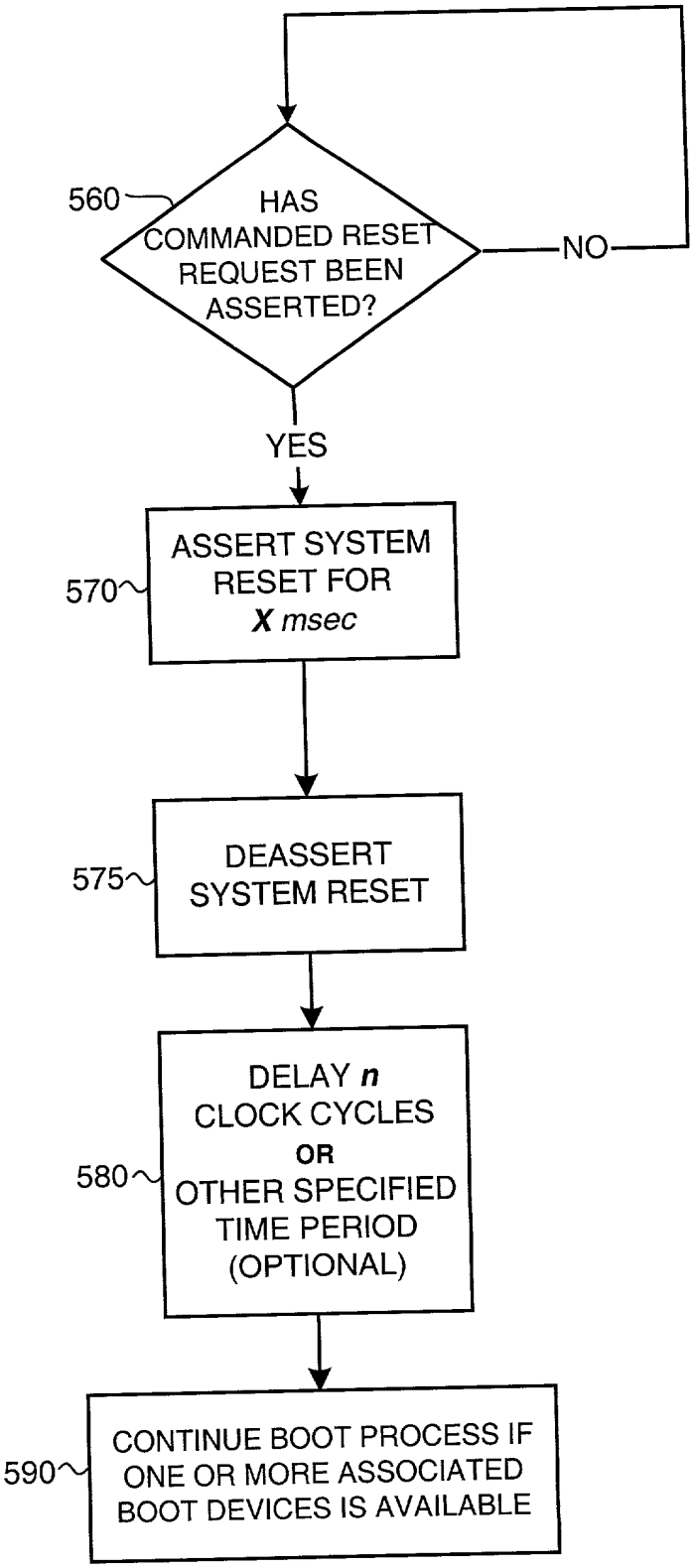


(PRIOR ART)
FIG. 2

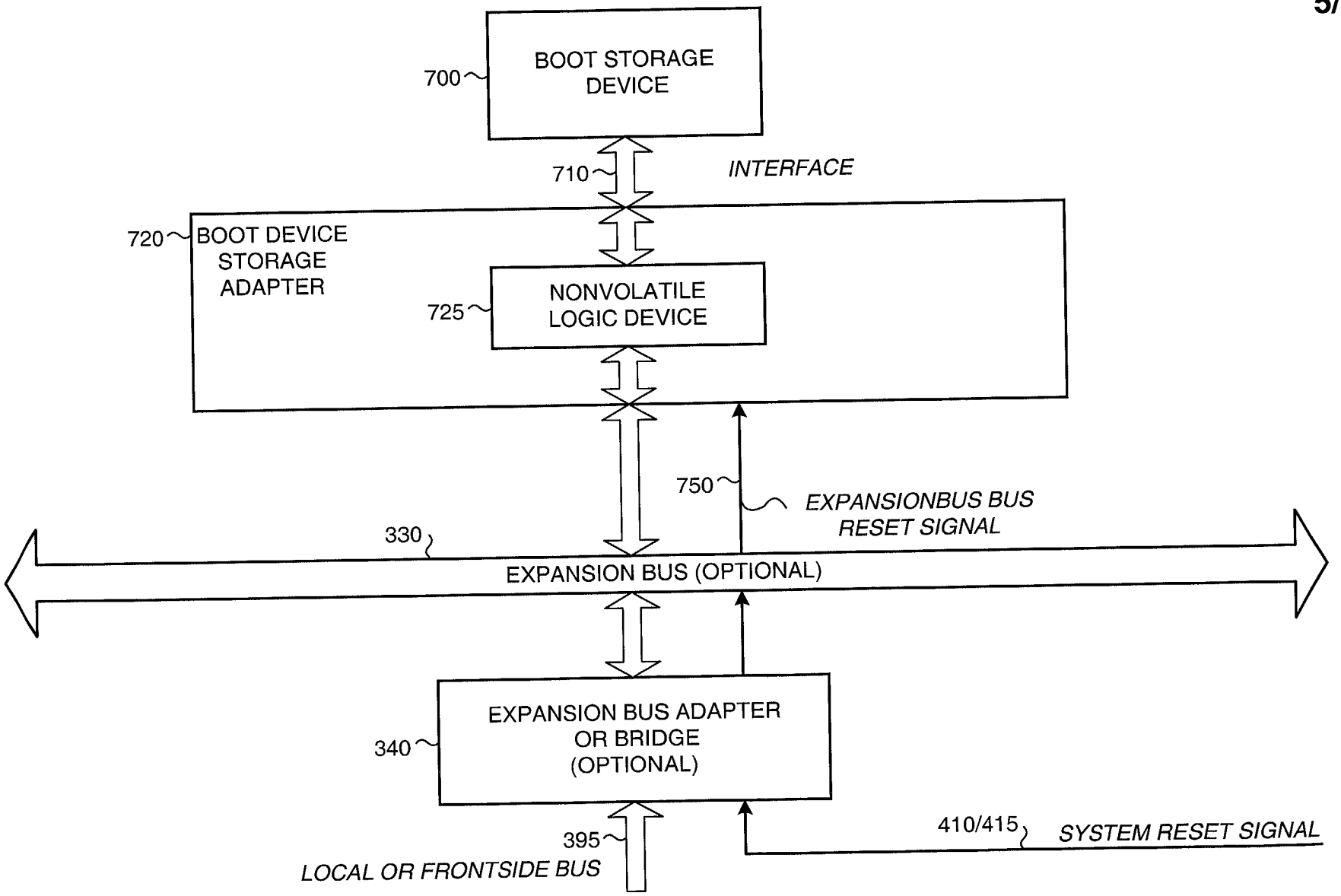


(PRIOR ART)

FIG. 3a



(PRIOR ART)
FIG. 3b



(PRIOR ART)
FIG. 4

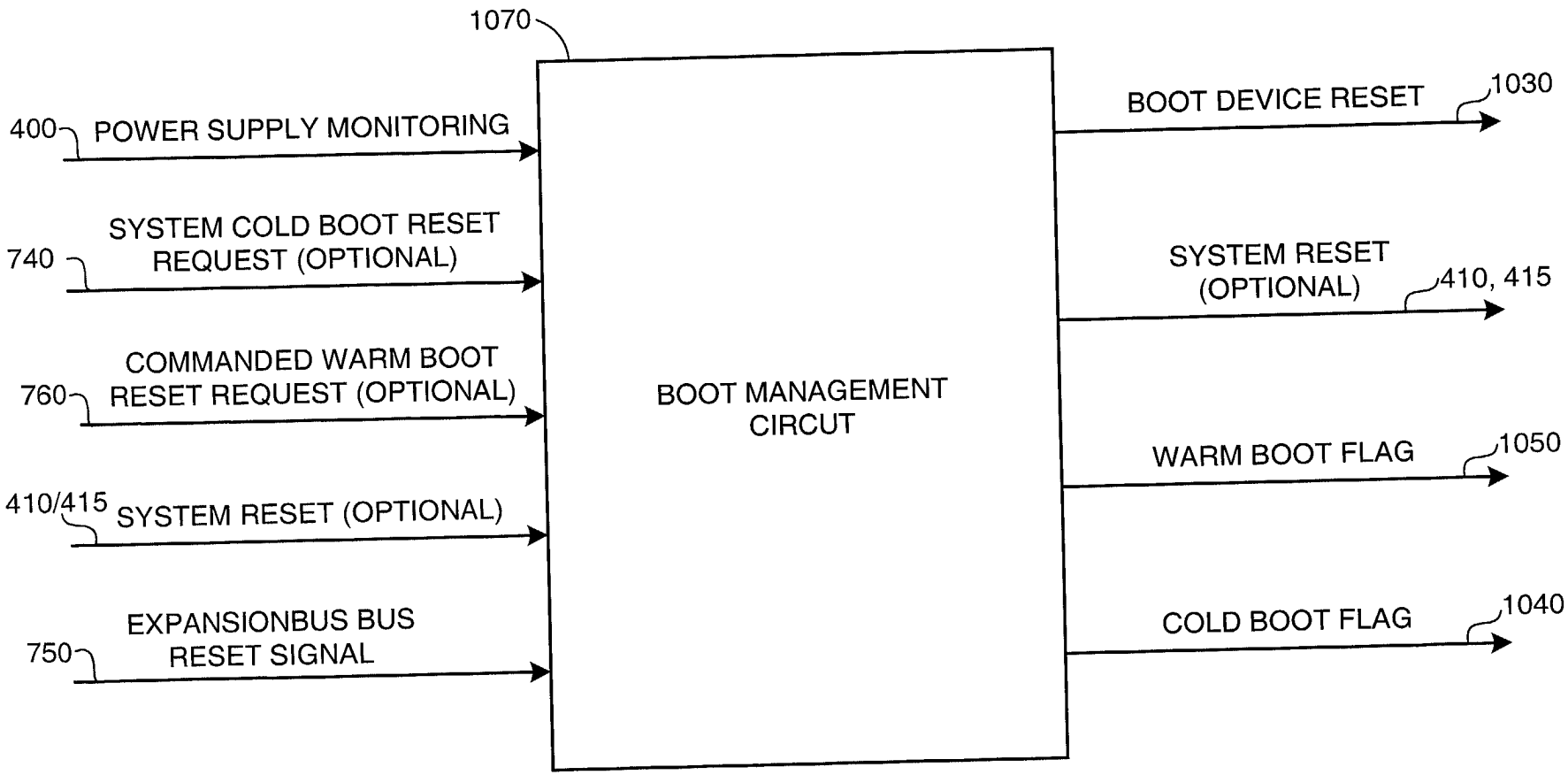

1070
400
POWER SUPPLY MONITORING
740
SYSTEM COLD BOOT RESET REQUEST (OPTIONAL)
760
COMMANDED WARM BOOT RESET REQUEST (OPTIONAL)
410/415
SYSTEM RESET (OPTIONAL)
750
EXPANSIONBUS BUS RESET SIGNAL
BOOT MANAGEMENT CIRCUT
BOOT DEVICE RESET
1030
SYSTEM RESET (OPTIONAL)
410, 415
WARM BOOT FLAG
1050
COLD BOOT FLAG
1040

FIG. 5

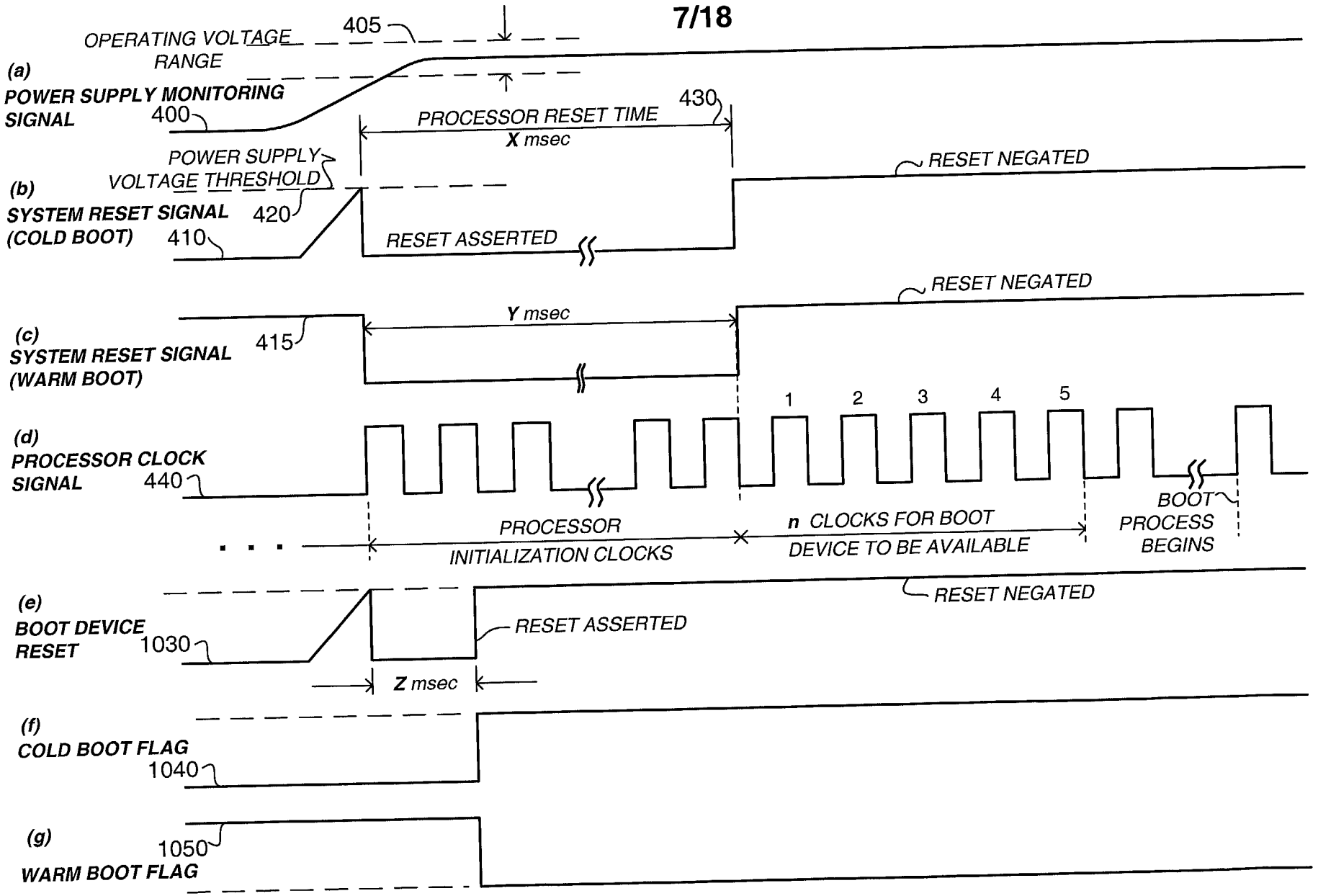

OPERATING VOLTAGE RANGE
405
(a)
POWER SUPPLY MONITORING SIGNAL
400
PROCESSOR RESET TIME
X msec
430
POWER SUPPLY VOLTAGE THRESHOLD
420
(b)
SYSTEM RESET SIGNAL (COLD BOOT)
410
RESET ASSERTED
RESET NEGATED
Y msec
(c)
SYSTEM RESET SIGNAL (WARM BOOT)
415
RESET NEGATED
1
2
3
4
5
(d)
PROCESSOR CLOCK SIGNAL
440
PROCESSOR INITIALIZATION CLOCKS
n CLOCKS FOR BOOT DEVICE TO BE AVAILABLE
BOOT PROCESS BEGINS
(e)
BOOT DEVICE RESET
1030
RESET ASSERTED
RESET NEGATED
Z msec
(f)
COLD BOOT FLAG
1040
(g)
WARM BOOT FLAG
1050

FIG. 6

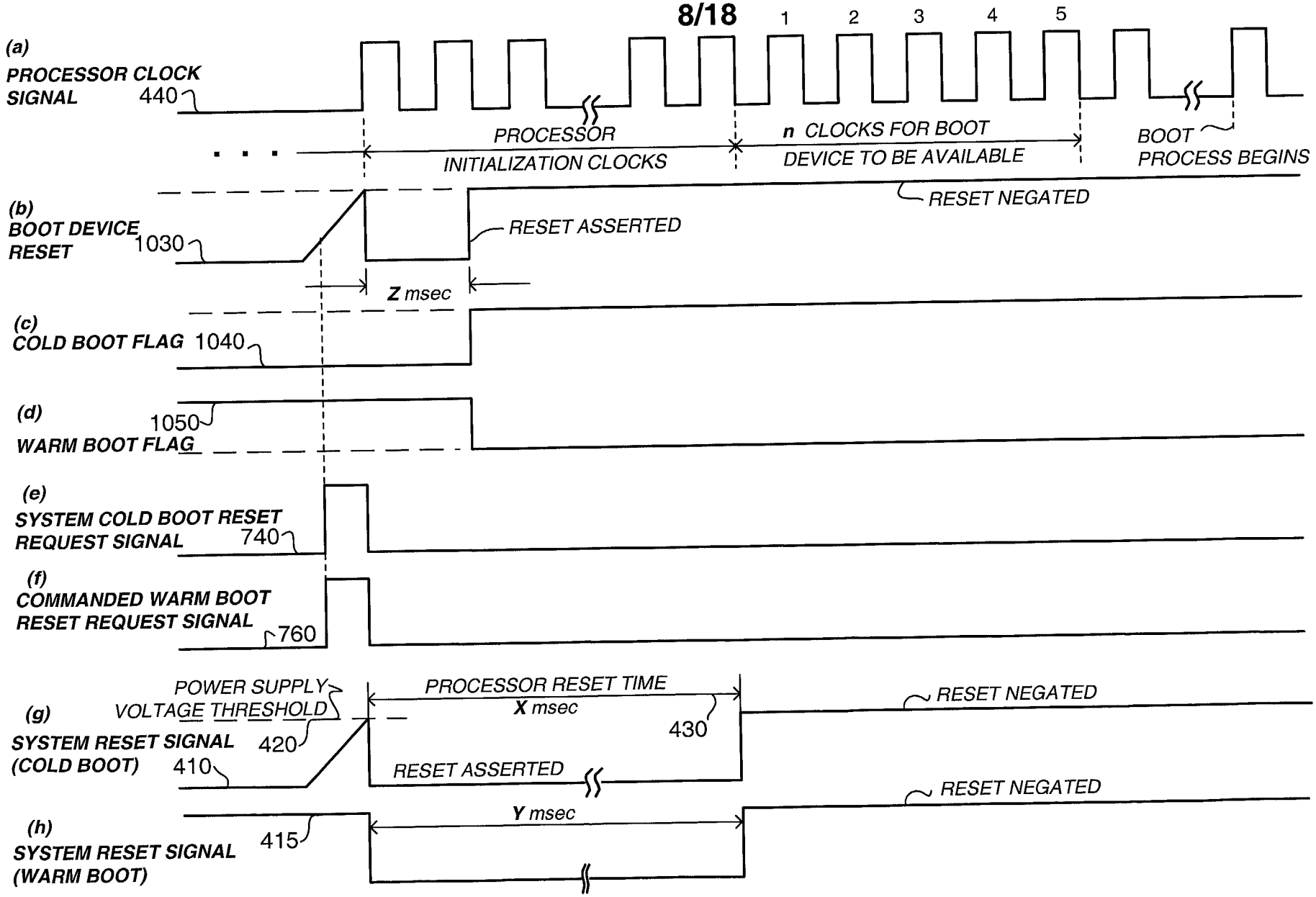

(a)
PROCESSOR CLOCK SIGNAL
440
1
2
3
4
5
PROCESSOR INITIALIZATION CLOCKS
n CLOCKS FOR BOOT DEVICE TO BE AVAILABLE
BOOT PROCESS BEGINS
(b)
BOOT DEVICE RESET
1030
RESET NEGATED
RESET ASSERTED
Z msec
(c)
COLD BOOT FLAG
1040
(d)
1050
WARM BOOT FLAG
(e)
SYSTEM COLD BOOT RESET REQUEST SIGNAL
740
(f)
COMMANDED WARM BOOT RESET REQUEST SIGNAL
760
POWER SUPPLY VOLTAGE THRESHOLD
PROCESSOR RESET TIME
X msec
(g)
SYSTEM RESET SIGNAL (COLD BOOT)
420
410
430
RESET NEGATED
RESET ASSERTED
Y msec
(h)
SYSTEM RESET SIGNAL (WARM BOOT)
415
RESET NEGATED

FIG. 7

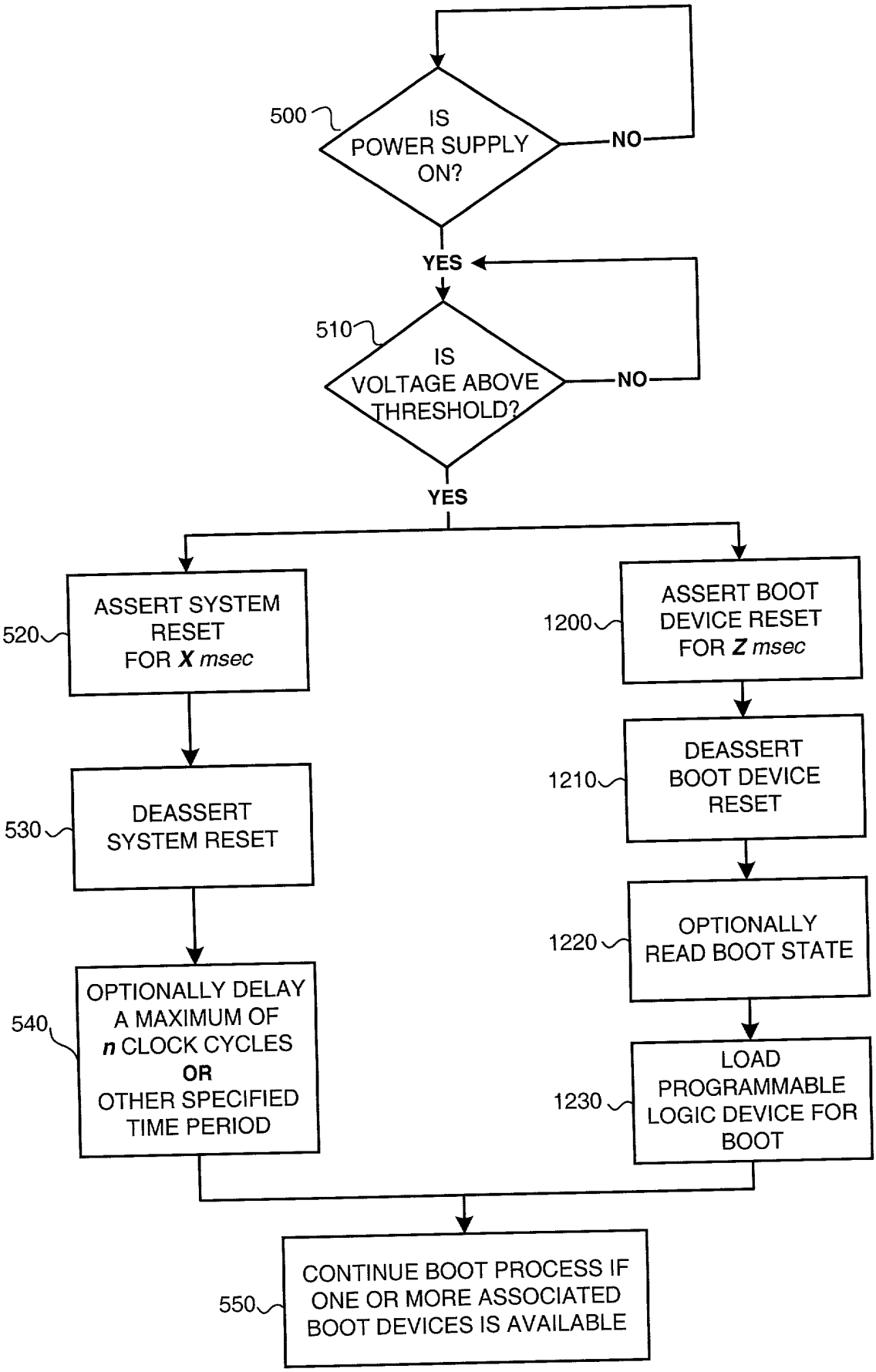

500
IS POWER SUPPLY ON?
NO
YES
510
IS VOLTAGE ABOVE THRESHOLD?
NO
YES
520
ASSERT SYSTEM RESET FOR X msec
530
DEASSERT SYSTEM RESET
540
OPTIONALLY DELAY A MAXIMUM OF n CLOCK CYCLES OR OTHER SPECIFIED TIME PERIOD
1200
ASSERT BOOT DEVICE RESET FOR Z msec
1210
DEASSERT BOOT DEVICE RESET
1220
OPTIONALLY READ BOOT STATE
1230
LOAD PROGRAMMABLE LOGIC DEVICE FOR BOOT
550
CONTINUE BOOT PROCESS IF ONE OR MORE ASSOCIATED BOOT DEVICES IS AVAILABLE

FIG. 8a

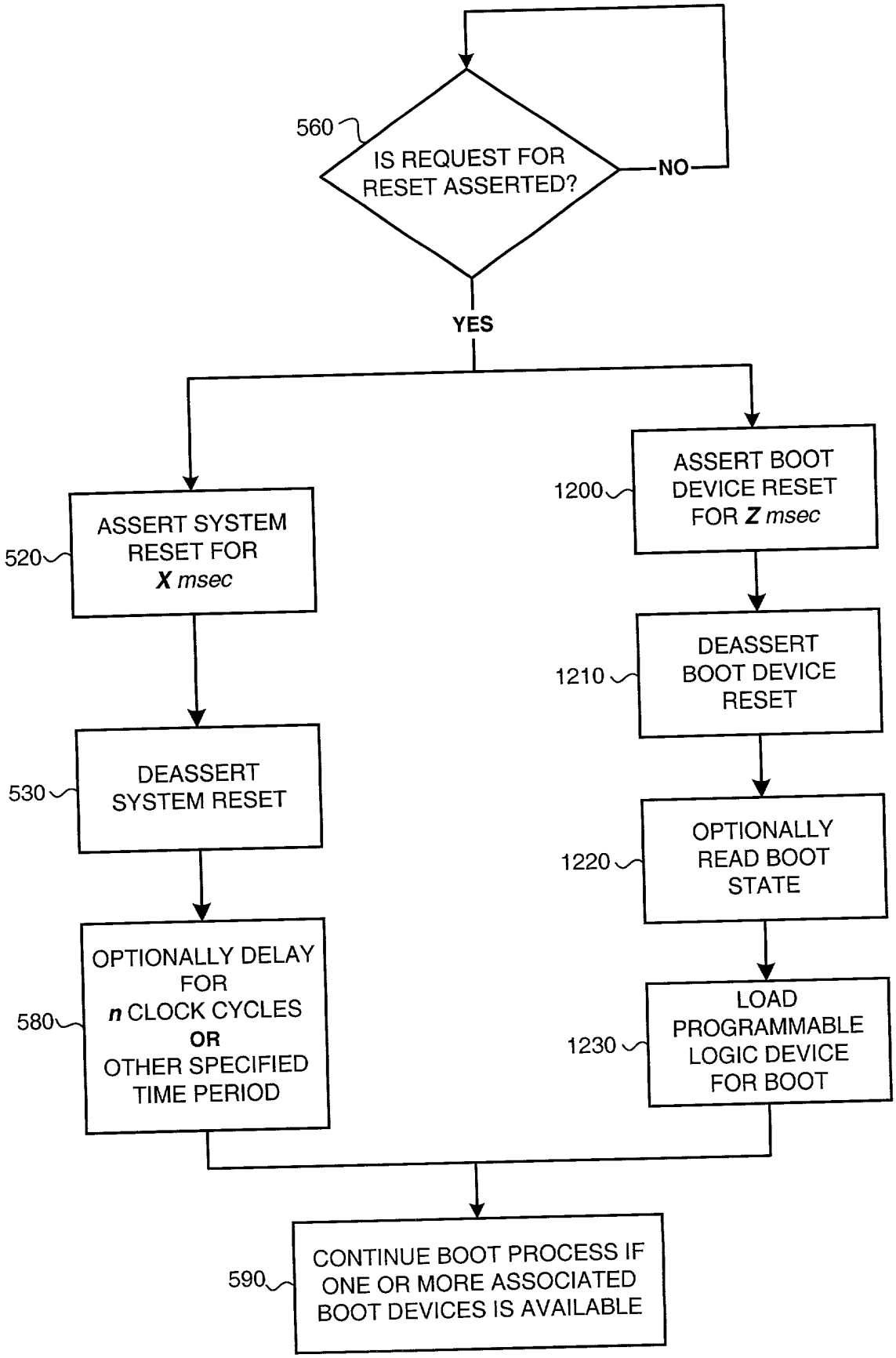

560
IS REQUEST FOR RESET ASSERTED?
NO
YES
ASSERT SYSTEM RESET FOR X msec
520
DEASSERT SYSTEM RESET
530
OPTIONALLY DELAY FOR n CLOCK CYCLES OR OTHER SPECIFIED TIME PERIOD
580
ASSERT BOOT DEVICE RESET FOR Z msec
1200
DEASSERT BOOT DEVICE RESET
1210
OPTIONALLY READ BOOT STATE
1220
LOAD PROGRAMMABLE LOGIC DEVICE FOR BOOT
1230
CONTINUE BOOT PROCESS IF ONE OR MORE ASSOCIATED BOOT DEVICES IS AVAILABLE
590

FIG. 8b

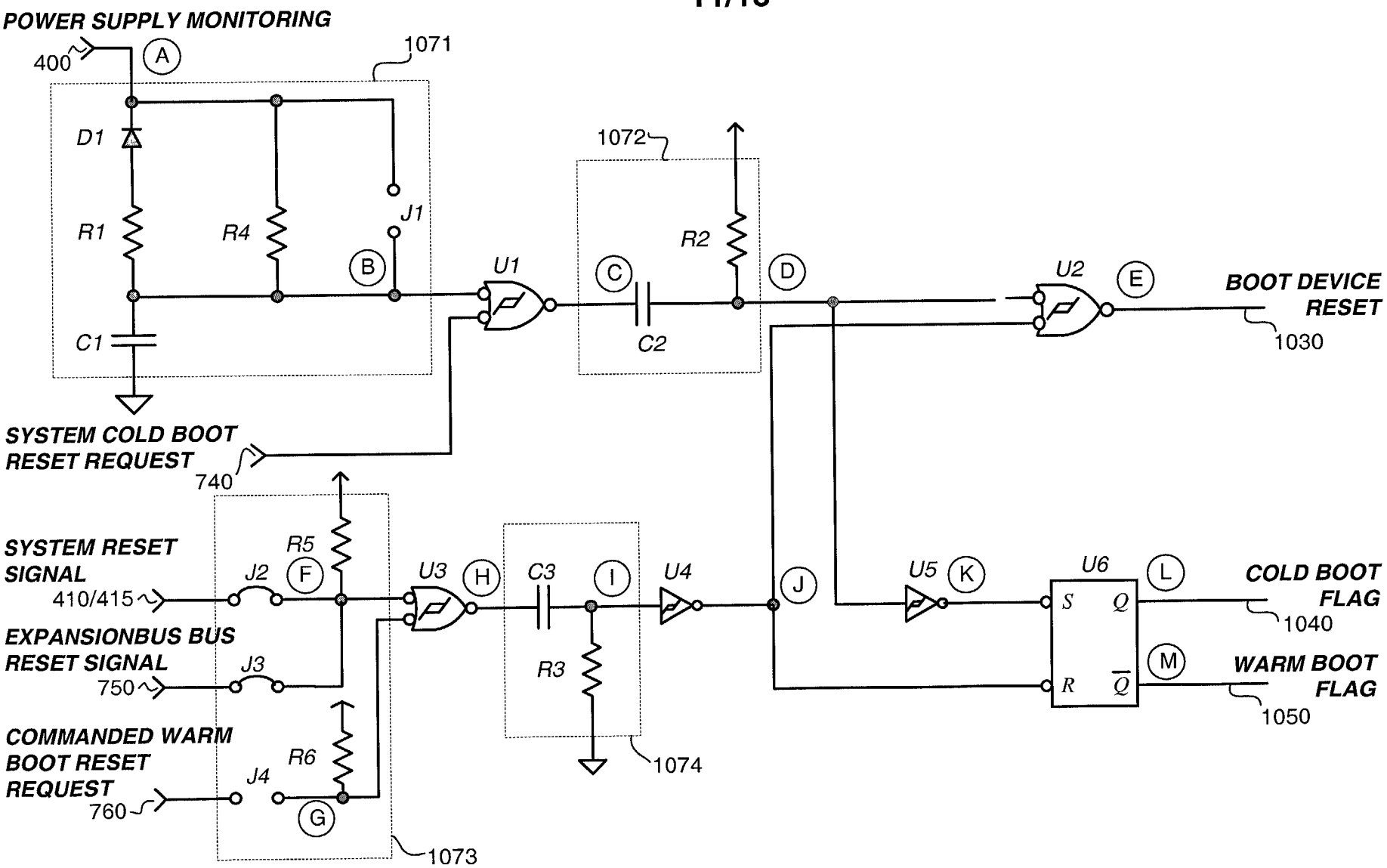

POWER SUPPLY MONITORING
400
A
1071
D1
R1
R4
J1
B
C1
U1
1072
C
C2
R2
D
U2
E
BOOT DEVICE RESET
1030
SYSTEM COLD BOOT RESET REQUEST
740
SYSTEM RESET SIGNAL
410/415
J2
F
R5
U3
H
C3
I
U4
J
U5
K
U6
L
S
Q
COLD BOOT FLAG
1040
EXPANSIONBUS BUS RESET SIGNAL
750
J3
R3
M
R
Q
WARM BOOT FLAG
1050
COMMANDED WARM BOOT RESET REQUEST
760
J4
R6
G
1073
1074

FIG. 9

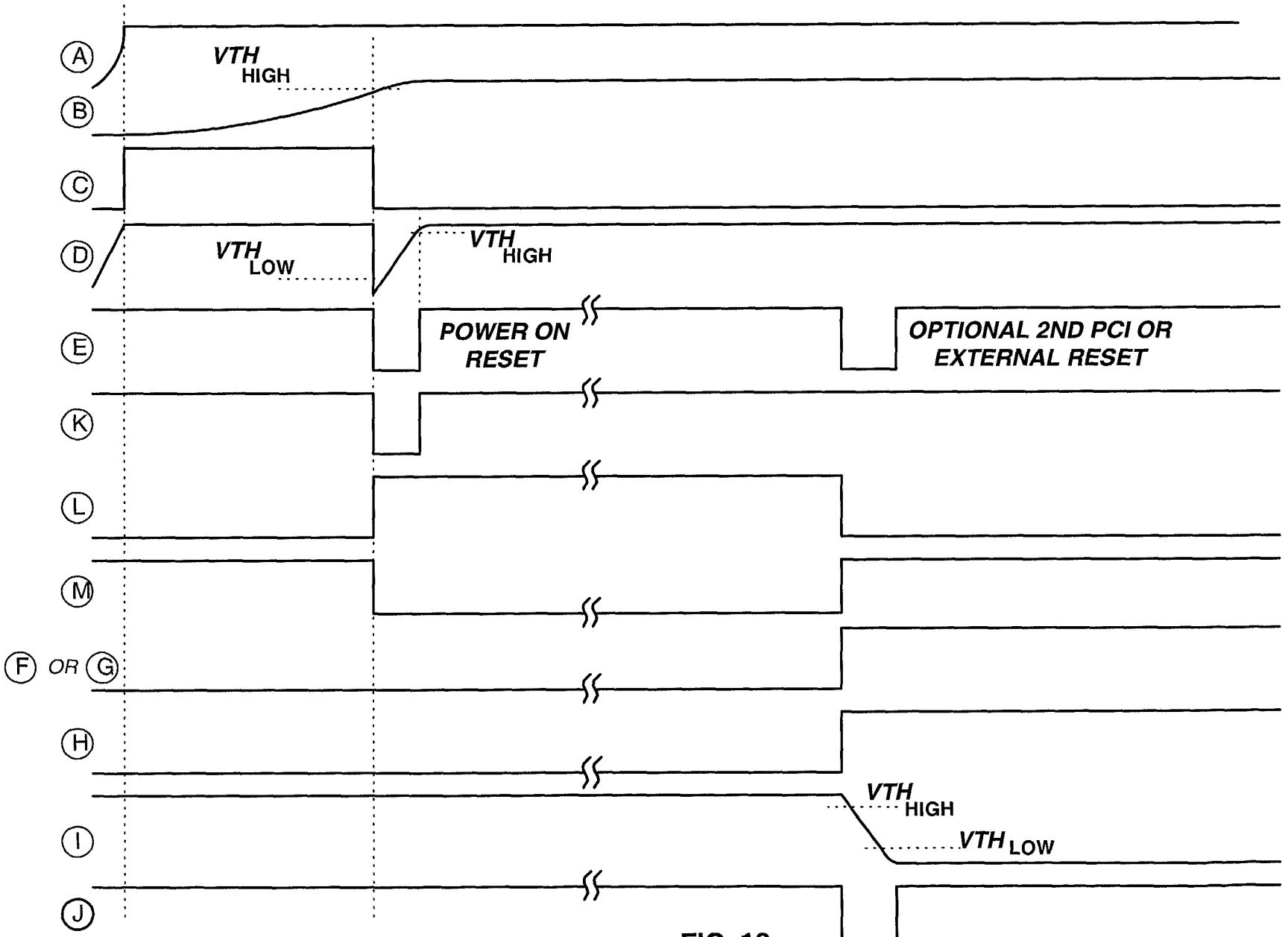

A
B
C
D
E
K
L
M
F OR G
H
I
J
VTH HIGH
VTH LOW
VTH HIGH
POWER ON RESET
OPTIONAL 2ND PCI OR EXTERNAL RESET
VTH HIGH
VTH LOW

FIG. 10

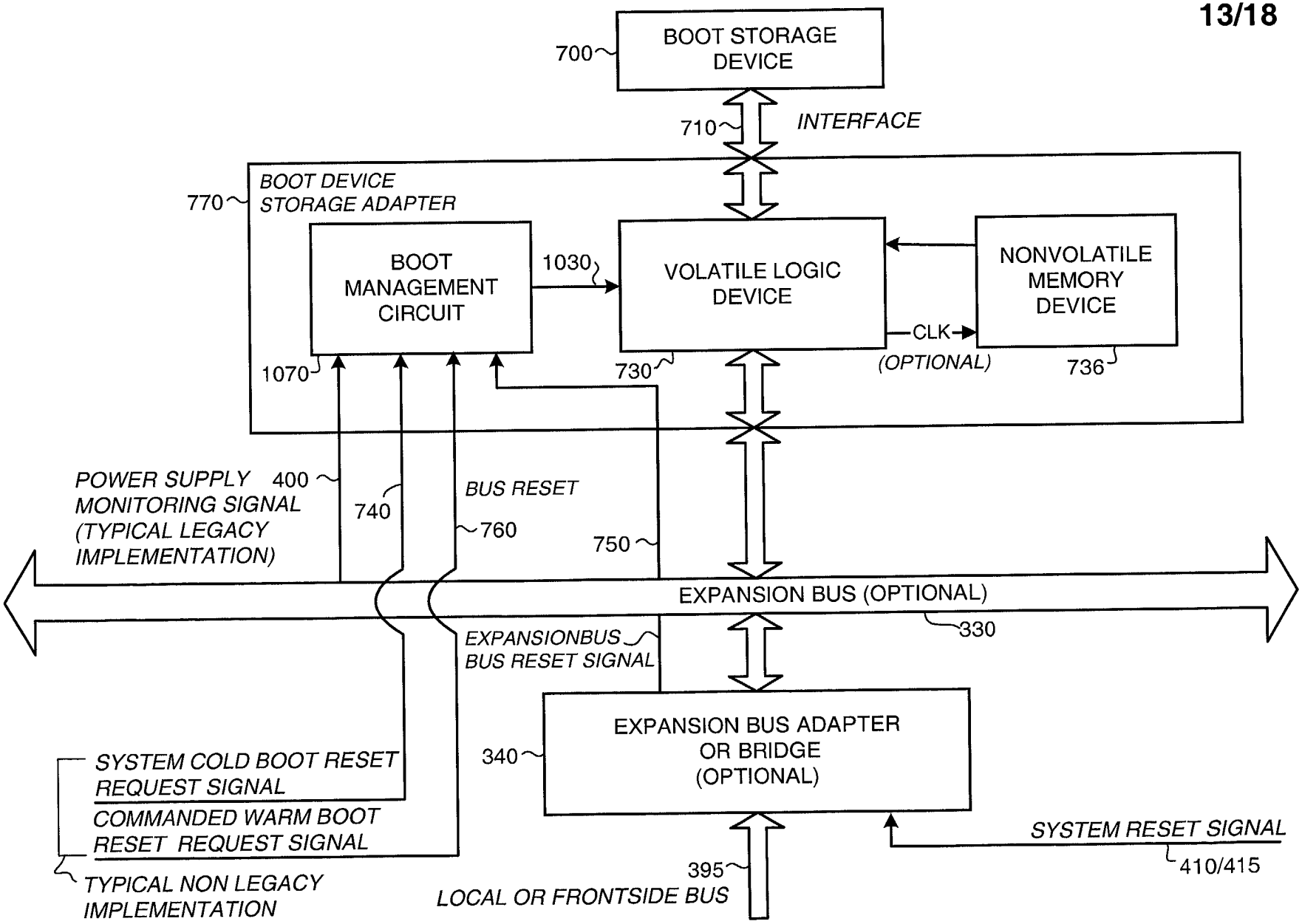

700
BOOT STORAGE DEVICE
710
INTERFACE
770
BOOT DEVICE STORAGE ADAPTER
BOOT MANAGEMENT CIRCUIT
1030
VOLATILE LOGIC DEVICE
NONVOLATILE MEMORY DEVICE
CLK
(OPTIONAL)
736
1070
730
POWER SUPPLY MONITORING SIGNAL (TYPICAL LEGACY IMPLEMENTATION)
400
740
BUS RESET
760
750
EXPANSION BUS (OPTIONAL)
330
EXPANSIONBUS BUS RESET SIGNAL
340
EXPANSION BUS ADAPTER OR BRIDGE (OPTIONAL)
SYSTEM COLD BOOT RESET REQUEST SIGNAL
COMMANDED WARM BOOT RESET REQUEST SIGNAL
TYPICAL NON LEGACY IMPLEMENTATION
SYSTEM RESET SIGNAL
410/415
395
LOCAL OR FRONTSIDE BUS

FIG. 11

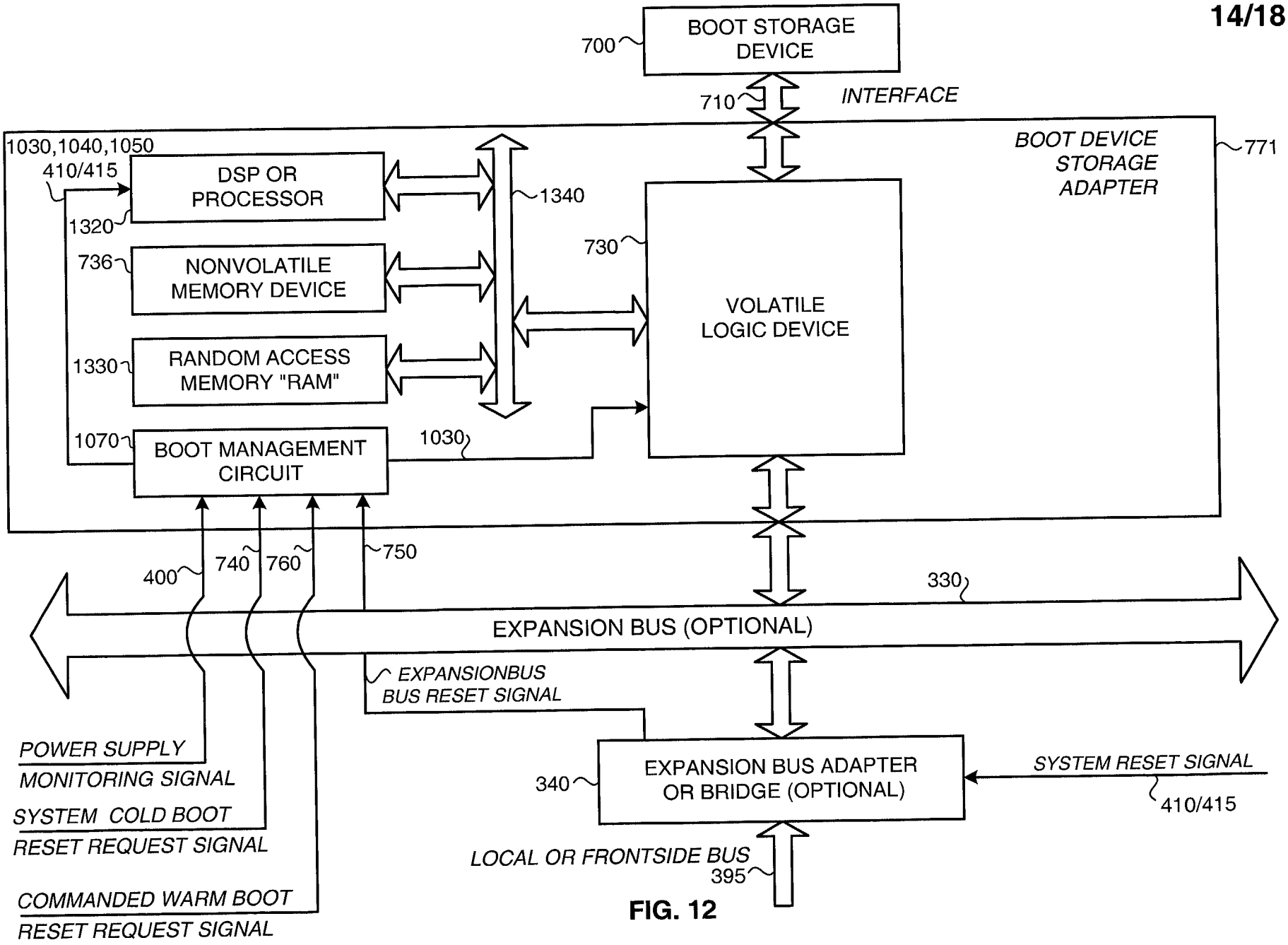

BOOT STORAGE DEVICE
700
710
INTERFACE
BOOT DEVICE STORAGE ADAPTER
771
1030,1040,1050
410/415
DSP OR PROCESSOR
1320
1340
736
NONVOLATILE MEMORY DEVICE
730
VOLATILE LOGIC DEVICE
1330
RANDOM ACCESS MEMORY "RAM"
1070
BOOT MANAGEMENT CIRCUIT
1030
400
740
760
750
330
EXPANSION BUS (OPTIONAL)
EXPANSIONBUS BUS RESET SIGNAL
POWER SUPPLY MONITORING SIGNAL
SYSTEM COLD BOOT RESET REQUEST SIGNAL
COMMANDED WARM BOOT RESET REQUEST SIGNAL
340
EXPANSION BUS ADAPTER OR BRIDGE (OPTIONAL)
SYSTEM RESET SIGNAL
410/415
LOCAL OR FRONTSIDE BUS
395

FIG. 12

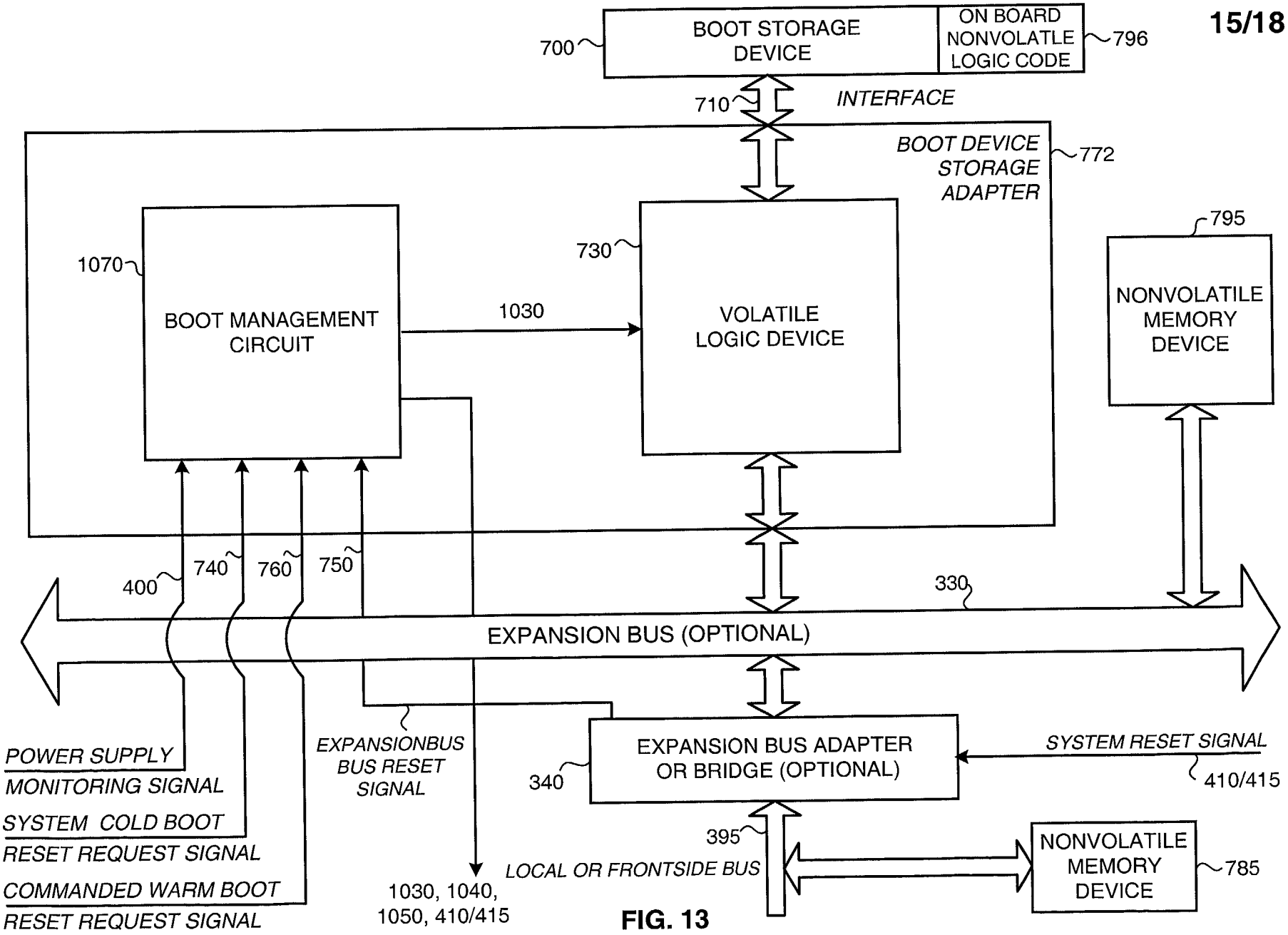

700
BOOT STORAGE DEVICE
ON BOARD NONVOLATLE LOGIC CODE
796
710
INTERFACE
BOOT DEVICE STORAGE ADAPTER
772
1070
BOOT MANAGEMENT CIRCUIT
730
1030
VOLATILE LOGIC DEVICE
795
NONVOLATILE MEMORY DEVICE
400
740
760
750
330
EXPANSION BUS (OPTIONAL)
POWER SUPPLY MONITORING SIGNAL
SYSTEM COLD BOOT RESET REQUEST SIGNAL
COMMANDED WARM BOOT RESET REQUEST SIGNAL
EXPANSIONBUS BUS RESET SIGNAL
1030, 1040, 1050, 410/415
340
EXPANSION BUS ADAPTER OR BRIDGE (OPTIONAL)
SYSTEM RESET SIGNAL
410/415
395
LOCAL OR FRONTSIDE BUS
NONVOLATILE MEMORY DEVICE
785

FIG. 13

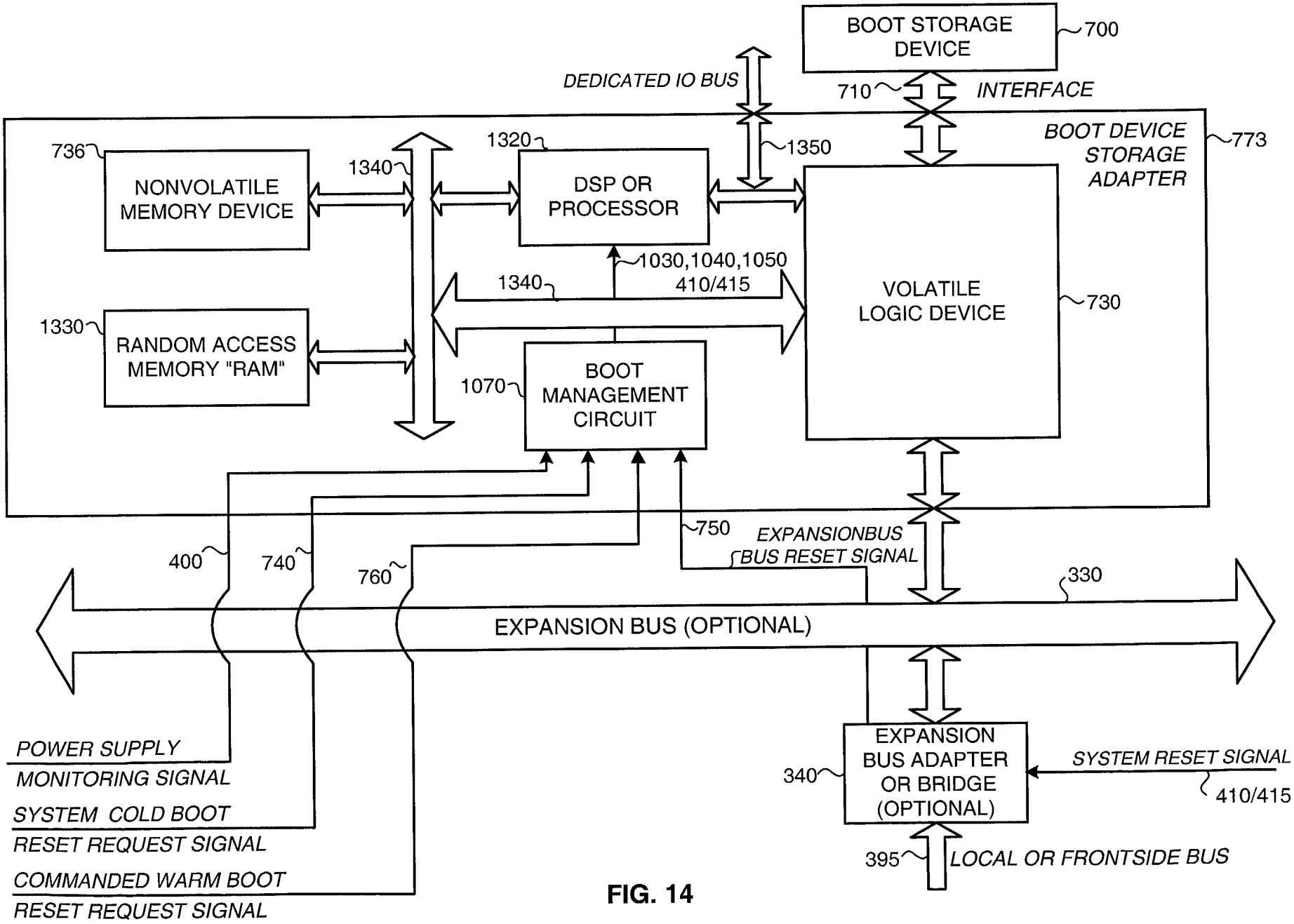

BOOT STORAGE DEVICE
700
DEDICATED IO BUS
710
INTERFACE
BOOT DEVICE STORAGE ADAPTER
773
736
NONVOLATILE MEMORY DEVICE
1340
1320
DSP OR PROCESSOR
1350
1030,1040,1050
410/415
1340
VOLATILE LOGIC DEVICE
730
1330
RANDOM ACCESS MEMORY "RAM"
1070
BOOT MANAGEMENT CIRCUIT
750
EXPANSIONBUS
BUS RESET SIGNAL
400
740
760
330
EXPANSION BUS (OPTIONAL)
POWER SUPPLY
MONITORING SIGNAL
SYSTEM COLD BOOT
RESET REQUEST SIGNAL
COMMANDED WARM BOOT
RESET REQUEST SIGNAL
EXPANSION BUS ADAPTER OR BRIDGE (OPTIONAL)
340
SYSTEM RESET SIGNAL
410/415
395
LOCAL OR FRONTSIDE BUS

FIG. 14

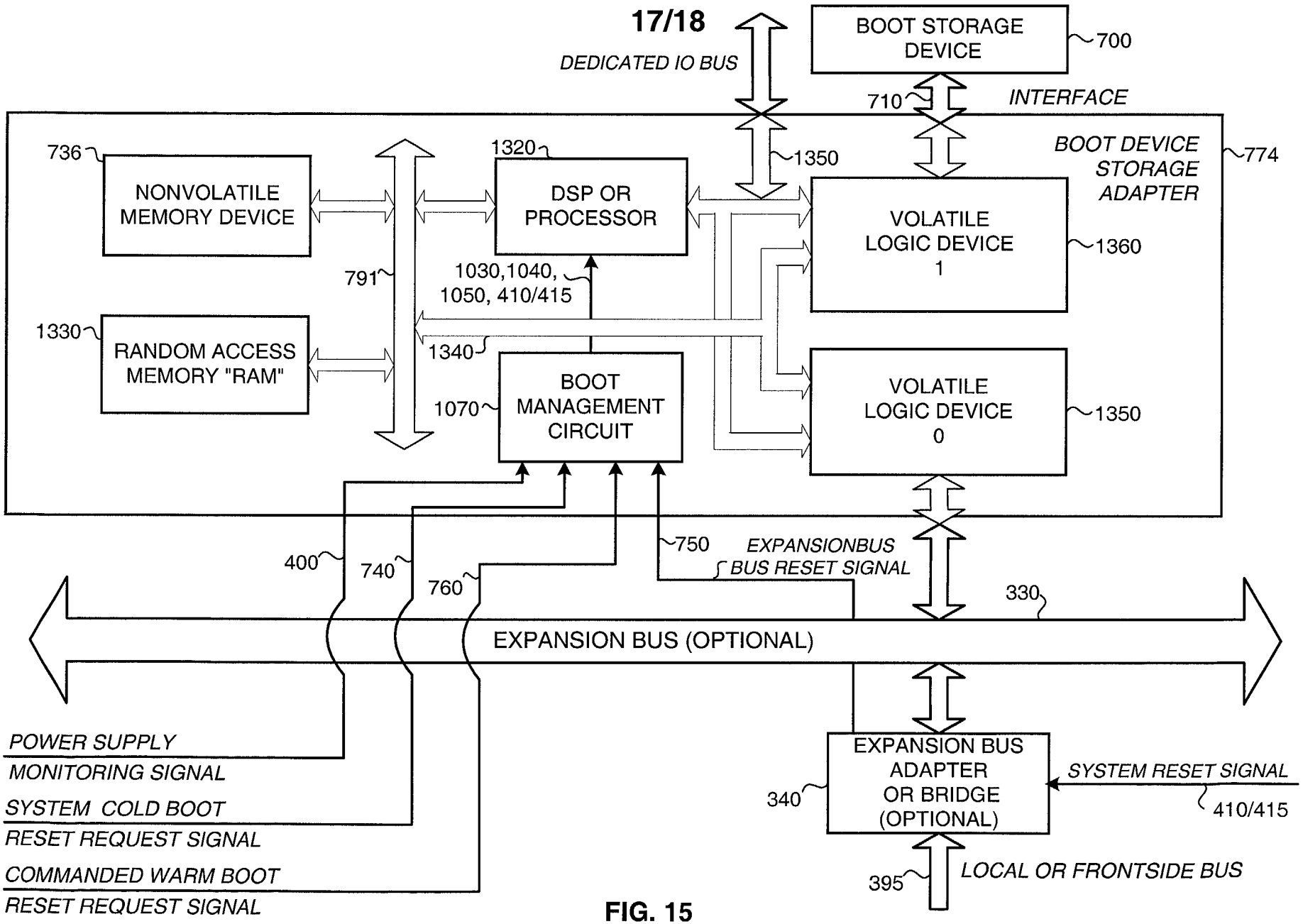

DEDICATED IO BUS
BOOT STORAGE DEVICE
700
710
INTERFACE
1350
BOOT DEVICE STORAGE ADAPTER
774
736
NONVOLATILE MEMORY DEVICE
1320
DSP OR PROCESSOR
VOLATILE LOGIC DEVICE 1
1360
791
1030,1040, 1050, 410/415
1330
RANDOM ACCESS MEMORY "RAM"
1340
1070
BOOT MANAGEMENT CIRCUIT
VOLATILE LOGIC DEVICE 0
1350
400
740
760
750
EXPANSIONBUS
BUS RESET SIGNAL
330
EXPANSION BUS (OPTIONAL)
POWER SUPPLY
MONITORING SIGNAL
SYSTEM COLD BOOT
RESET REQUEST SIGNAL
COMMANDED WARM BOOT
RESET REQUEST SIGNAL
EXPANSION BUS ADAPTER OR BRIDGE (OPTIONAL)
340
SYSTEM RESET SIGNAL
410/415
395
LOCAL OR FRONTSIDE BUS

FIG. 15

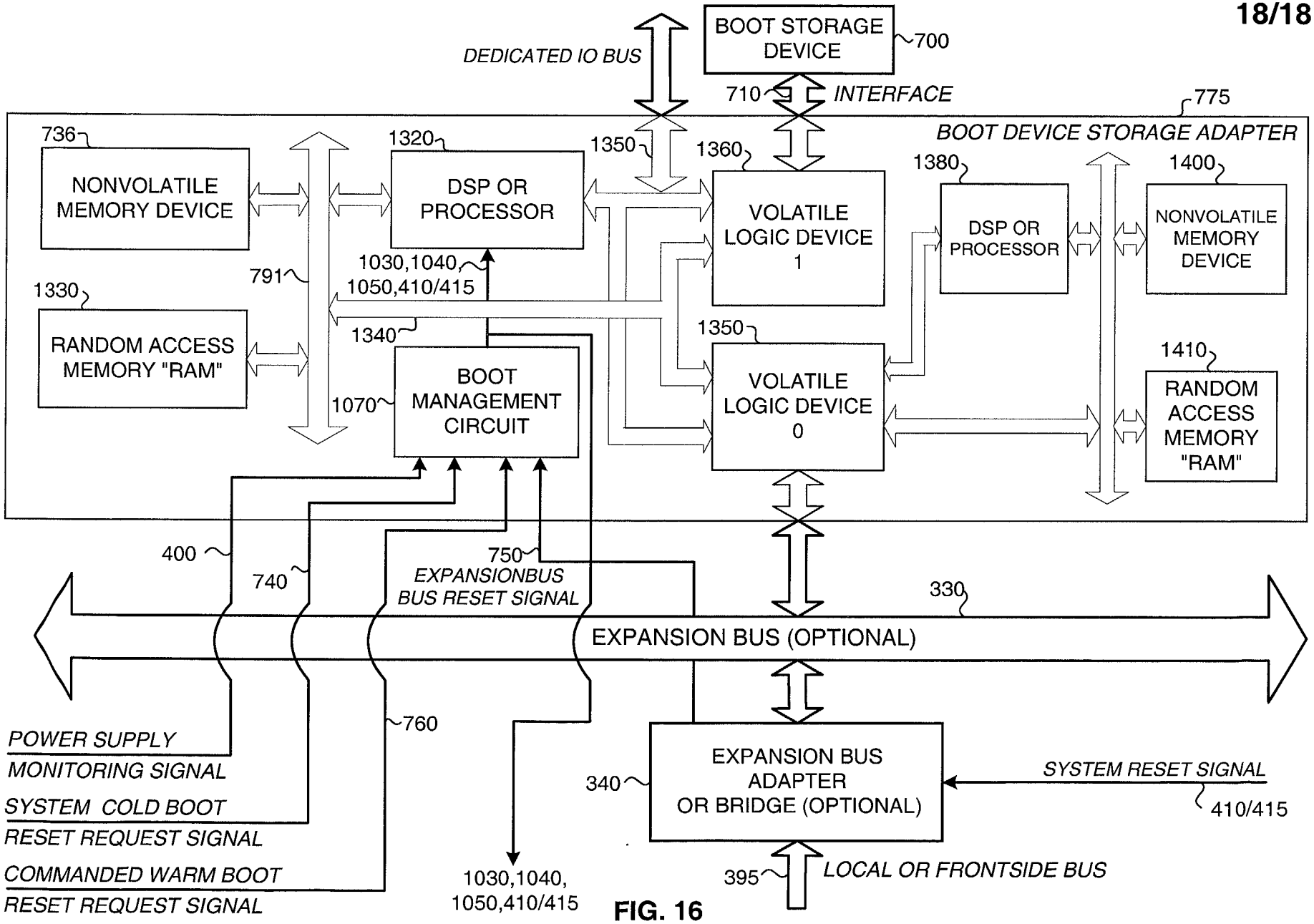

BOOT STORAGE DEVICE
700
DEDICATED IO BUS
710
INTERFACE
775
BOOT DEVICE STORAGE ADAPTER
736
NONVOLATILE MEMORY DEVICE
1320
DSP OR PROCESSOR
1350
1360
VOLATILE LOGIC DEVICE 1
1380
DSP OR PROCESSOR
1400
NONVOLATILE MEMORY DEVICE
791
1030,1040, 1050,410/415
1330
RANDOM ACCESS MEMORY "RAM"
1340
1350
1410
BOOT MANAGEMENT CIRCUIT
1070
VOLATILE LOGIC DEVICE 0
RANDOM ACCESS MEMORY "RAM"
400
740
750
EXPANSIONBUS BUS RESET SIGNAL
330
EXPANSION BUS (OPTIONAL)
760
POWER SUPPLY MONITORING SIGNAL
SYSTEM COLD BOOT RESET REQUEST SIGNAL
COMMANDED WARM BOOT RESET REQUEST SIGNAL
1030,1040, 1050,410/415
340
EXPANSION BUS ADAPTER OR BRIDGE (OPTIONAL)
SYSTEM RESET SIGNAL
410/415
395
LOCAL OR FRONTSIDE BUS

FIG. 16